UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,870	07/02/2001	Rainer Sommer	10191/1867	1391

26646 7590 04/29/2008

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER	
FENNEMA, ROBERT E	

ART UNIT	PAPER NUMBER
2183	

MAIL DATE	DELIVERY MODE
04/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents

United States Patent and Trademark Office

P.O. Box 1450

Alexandria, VA 22313-1450

www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS

AND INTERFERENCES

Application Number: 09/897,870

Filing Date: July 02, 2001

Appellant(s): SOMMER, RAINER

Gerard A. Messina

Reg. No. 35,952

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1/28/2008 appealing from the Office action mailed 2/20/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6175913	Chesters et al.	1-2001
4033941	Eckard et al.	6-1990
6189084	Kurisu	2-2001

5410544	Kreifels et al.	4-1995
6067633	Robbins et al.	5-2000
4489414	Titherley	12-1984
6182203	Simar et al.	1-2001
4639916	Boutterin et al.	1-1987
5422305	Seabaugh et al.	6-1995

The Authoritative Dictionary of IEEE Standards Terms, 7th Edition. Standards Information Network IEEE Press, 2000. Page 693.

The American Heritage College Dictionary. Houghton Mifflin Company, 2002.Halfhill, Tom R. "Transforming the PC: Plug and Play". Sept 1994. Byte.com. http://www.byte.com/art/9409/sec7/art1.htm Sept 12, 2006

Microsoft and Intel. Plug and Play ISA Specification. V.1.0a. Microsoft and Intel. May 5, 1994.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1- 4, 6- 8, 10-14 and 16-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Titherley, U.S. 4,489,414 in view of The Plug and Play ISA Specification, a joint publication by Intel and Microsoft herein referred to as PnPISA and "Transforming the PC: Plug and Play" by Halfhill, herein referred to as Halfhill.

4. As per claim 1, Titherley teaches a method for controlling a run of a program executable on at least one microprocessor (Titherley: 8085A Microprocessor, figure 2) of a microcontroller, comprising the steps of:

a. Reading in information regarding a hardware of the microcontroller from at least one information register of the microcontroller: Module,7, EPROM 2716, is an information register'that contains initialization routines to configure ports 12 and 13, to cause the peripheral to start the disc drive motor, to cause the display to display different messages and to prompt the user, and to make the microprocessor wait for data to be entered via the keyboard. The routines that are read in are information regarding hardware of the microcontroller. [Titherley: Column **4,** lines 25-64]

b. And actuating at least one switch via which the program run is controlled as a function of the information read in: The 110 ports 12 and 13 are reconfigured by the information read in, which is an actuation of at least one switch. A signal is set to the peripheral to start the motor, which is also an actuation of a switch. The displays

are altered to display different messages, which is an actuation of a switch as well. Each of these is caused by the information read in and affect the way the program is controlled. [Titherley: Column **4,** lines 25-64]

Titherley does not teach program execution only depending on information in the at least one information register of the microcontroller, which is special for each microcontroller step without other external or operator influences.

It is the opinion of the examiner that all this simply describes is the functionality of Plug and Play, a term coined by (though not explicitly trademarked) Microsoft and Intel prior to the release of Windows95 Plug and Play was developed by Microsoft in conjunction with Intel and other hardware manufactures with the intent to be able to plug in a peripheral and not have to do anymore external configuration (i.e. jumpers,' switches) or software configuration (i.e. config files). While the idea was actually originated by Macintosh and bus protocols such as EISA and MCA, Plug and Play was the ISA that brought the concept into the mainstream

The idea behind plug and play is to be able to isolate and identify each component connected to the system and then configure it to work with that system (PnPISA: 3.2-3.3.2).

The advantages of using a plug and play like functionality are plentiful and apparent (PnPISA: 1 .l). An article sent to the applicant by Halfhill also outlines other aspects brought on by plug and play, mainly financial savings spurred by decreased complexity, which lowered tech support costs.

It is easy to see that this aspect has trickled into other portions of computing. Applied to Titherley, this would mean that user input would no longer be necessary since the system would be able to detect what the device was and what test needed to be performed; the steps outlines in Titherley column **4,** lines 46-64 would be automated. This is similar to the PnP power-on self-test, or POST.

Therefore, it would have been obvious to one of ordinary skill in the pertinent art at the time of the applicant's invention that applying plug and play functionality to Titherley would be able reduce the complexity of the system, which is a burden to the user, and thus automate the system.

5. As per claim 2, Titherley teaches the method according to claim 1, wherein: the information read in corresponds to at least one of the at least one microprocessor of the microcontroller and at least one additional component of the microcontroller. The information read in corresponds to the Ports 12 and 13, an additional component of the microcontroller, because the information is used for initializing them. [Titherley: Column 4, Lines 25-64]

6. As per claim 3, Titherley teaches the method according to claim 1, further comprising the step of:

c. Controlling a run of a test program that is executable on the at least one microprocessor of the microcontroller of a testing device and is for testing at least

one of an additional microcontroller of a control unit: The test program is for testing the peripheral (in.the example, a disc drive). [Titherley: Column 3, lines **4-** 5 and column 4**,** line 65 to column 5, line 401.

d. And a control program executable on at least one microprocessor of the additional microcontroller: The disc drive receives signals that make up commands from the microprocessor 8085A and I10 ports 12 and 13. The disc drive executes the commands it receives, the commands therefore making up an executable control program. Microprocessor is defined as, "An integrated circuit that contains the logic elements for manipulating data and for making decisions." (The Authoritative Dictionary of IEEE Standards Terms, 7th ed.) The disc drive receives signals and decides how to handle the signals, i.e., start the motor, read, write, etc. The disc drive also writes data to different areas of a disc, sometimes overwriting old data, and therefore is manipulating data. Therefore, a disc drive inherently has a microprocessor, which is executing the control program.

e. The controlling being performed as a function of information regarding a hardware of the additional microcontroller: The controlling being performed is a function of information entered by the user regarding the disc drive's hardware specifications. [Titherley: Column 4, lines 46-64]

7. As per claim 4, Titherley teaches the method according to claim 1, further comprising the step of:

f. Controlling a run of a control program that is executable on the at least one microprocessor of the microcontroller of a control unit: The user inputs information that controls the run of the control program that is executable on the microprocessor 8085A. [Titherley: Column 4, lines 46-64]

g. And is for controlling/regulating technical operations and processes: The control program receives information from the user about the specifications of the disc drive. This is for controlling communications with the disc drive, which are technical operations and processes. [Titherley: Column 4, lines 46-64]

h. The controlling being performed as a function of the information regarding the hardware of the microcontroller. Communication with the peripheral occurs through ports 12 and 13, which was part. of the information regarding the hardware of the microcontroller. [Titherley: Column 4, lines 25-45]

8. As per claim 6, Titherley teaches a control element for one of a control unit of an internal combustion engine, the control element including a microcontroller, and a testing device for testing at least one of the microcontroller, the control unit including the microcontroller, and a program executable on at least one microprocessor of a microcontroller, the control element comprising:

-The "internal combustion engine" of the preamble is given no patentable weight because it is an intended use and has no further mention or disclosure in the body of the claim.

i. A storage medium (Titherley: Figure 2, 2716 EPROM) storing a program sequence that can be executed on a computing element (Titherley: Figure 2, Microprocessor 8085A), the program sequence causing the computing element to: [Titherley: Column 3, line 66 to column 4, line 6, column 4, lines 25 to column 5, line 141

j. Read in information regarding a hardware of the microcontroller from at least one information register of the microcontroller: EPROM 2716 is made up of addressable memory locations (i.e., registers), which contain information .. regarding hardware of the microcontroller (all of figure 2 except the peripheral under test, module 8). [Titherley: Column 4, lines 25 to column 5, lines 141

k. And actuate at least one switch via which a program run is controlled as a function of the information read in: The I10 ports 12 and 13 are reconfigured as output ports based on the information read from module 7 (Titherley: EPROM 2716), which is an actuation of a switch. [Titherley: Column **4,** lines 25-37]
Titherley does not teach program execution only depending on information in the at least one information register of the microcontroller, which is special for each microcontroller step without other external or operator influences.

It is the opinion of the examiner that all this simply describes is the functionality of Plug and Play, a term coined by (though not explicitly trademarked) Microsoft and Intel prior to the release of Windows95. Plug and Play was developed by Microsoft in conjunction with Intel and other hardware manufactures with the

intent to be able to plug in a peripheral and not have to do anymore external configuration (i.e. jumpers, switches) or software configuration (i.e. config files). While the idea was actually originated by Macintosh and bus protocols such as EISA and MCA, Plug and Play was the ISA that brought the concept into the mainstream. The idea behind plug and play is to be able to isolate and identify each component connected to the system and then configure it to work with that system (PnPISA: 3.2-3.3.2).

The advantages of using a plug and play like functionality are plentiful and apparent (PnPISA: 1 .I). An article sent to the applicant by Halfhill also outlines other aspects brought on by plug and play, mainly financial savings spurred by decreased complexity, which lowered tech support costs.

It is easy to see that this aspect has trickled into other portions of computing. Applied to Titherley, this would mean that user input would no longer be necessary since the system would be able to detect what the device was and what test needed to be performed; the steps outlines in Titherley column 4, lines 46-64 would be automated. This is similar to the PnP power-on self-test, or POST.

Therefore, it would have been obvious to one of ordinary skill in the pertinent art at the time of the applicant's invention that applying plug and play functionality to Titherley would be able reduce the complexity of the system, which is a burden to the user, and thus automate the system.

9. As per claim 7, Titherley teaches the control element according to claim 6, wherein: the computing element includes the at least one microprocessor: the computing element is Microprocessor 8085A. [Titherley: Figure 21]

10. As per claim 8, Titherley teaches the control element according to claim 6, wherein: the storage medium includes one of a read only memory and a flash memory: The storage medium is EPROM 2716. [Titherley: Figure 21]

11. As per claim 10, Titherley teaches a microcontroller, comprising:

l. At least one microprocessor (Titherley: 8085A Microprocessor, figure 2) including a program that is executable on the at least one microprocessor: Multiple routines are executed by the microprocessor. [Titherley: Column 3, lines 23-33, and line 66 to column 4, line 6, column 4, lines 25-64]

m. At least one information register: EPROM 2716, (Titherley: module 7), is contains addressable information. [Titherley: Column 4, lines 25-50]

n. An arrangement for reading in information regarding a hardware of the microcontroller from the at least one information register: EPROM 2716 is made. up of addressable memory locations (i.e., registers), which contain information regarding hardware of the microcontroller (made up of all of figure 2 except the peripheral under test, module 8). [Titherley: Column 4, lines 25 to column 5, lines

o. And at least one switch actuatable as a function of the information read in: The I10 ports 12 and 13 are reconfigured as output ports based on the information read from module 7 (Titherley: EPROM 2716), which is an actuation of a switch. [Titherley: Column **4,** lines 25-37]

p. And for controlling a run of the program executable on the at least one - microprocessor: The I10 ports 12 and 13 are reconfigured as output ports based on the information read from module 7 (Titherley: EPROM 2716), which are used for controlling a run of the program executable. Data is passed through the I10 that affects the control of the program. [Titherley: Column 4, lines 25 to column 5, line 401

Titherley does not teach program execution only depending on information in the at least one information register of the microcontroller, which is special for each microcontroller step without other external or operator influences.

It is the opinion of the examiner that all this simply describes is the functionality of Plug and Play, a term coined by (though not explicitly trademarked) Microsoft and Intel prior to the release of Windows95. Plug and Play was developed by Microsoft in conjunction with Intel and other hardware manufactures with the intent to be able to plug in a peripheral and not have to do anymore external configuration (i.e. jumpers, switches) or software configuration (i.e. config files). While the idea was actually originated by Macintosh and bus protocols such as EISA and MCA, Plug and Play was the ISA that brought the concept into the mainstream.

The idea behind plug and play is to be able to isolate and identify each component connected to the system and then configure it to work with that system (PnPISA: 3.2-3.3.2).

The advantages of using a plug and play like functionality are plentiful and apparent (PnPISA: 1 .I). An article sent to the applicant by Halfhill also outlines other aspects brought on by plug and play, mainly financial savings spurred by decreased complexity, which lowered tech support costs.

It is easy to see that this aspect has trickled into other portions of computing. Applied to Titherley, this would mean that user input would no longer, be necessary since the system would be able to detect what the device was and what test needed to be performed; the steps outlines in Titherley column 4, lines 46-64 would be automated. This is similar to the PnP power-on self-test, or POST.

Therefore, it would have been obvious to one of ordinary skill in the pertinent art at the time of the applicant's invention that applying plug and play functionality to Titherley would be able reduce the complexity of the system, which is a burden to the user, and thus automate the system.

12. As per claim 11, Titherley teaches the microcontroller according to claim 10, wherein: the information read in corresponds to at least one of the at least one microprocessor of the microcontroller and at least one additional component of the microcontroller: The information read in corresponds to the Ports 12 and 13, an

additional component of the microcontroller, because the information is used for initializing them. [Titherley: Column.4, lines 25-64]

13. As per claim 12, Titherley teaches the microcontroller according to claim 11, wherein: the information regarding the at least one additional component of the microcontroller includes information about at least one of an internal storage element, an analog/digital (AID) converter, a digital/analog (DIA) converter, and at least one databus: The information read in reconfigures the I10 ports 12 and 13, which are used to communicate with the peripheral under test via data buses. The information read is about data buses because it determines how the ports are configured and therefore how the data buses will be used. [Titherley: Figure 2, column **4,** lines 25-45 Column 3, lines 23-48]

14. As per claim 13, Titherley teaches the microcontroller according .to claim 10, wherein: the microcontroller is part of a testing device for testing at least' one of an additional microcontroller, a control unit, and the program executable on the at least one microprocessor: The microcontroller shown in figure 2 (all components except Peripheral Under Test, module 8) is for testing peripheral devices, and the example microcontroller is a disc drive. [Titherley: Column 4, line 25 to column 5, line 401

15. As per claim 14, Titherley teaches the microcontroller according to claim 10, wherein: the microcontroller is part of a control unit for controlling/regulating technical operations and processes. The microcontroller is for testing and exercising external devices or running self-diagnostic routines, which are technical operations and processes. [Titherley: Column 3, line 66 to column-4, line 6 and abstract]

16. As per claim 16, Titherley teaches the method according to claim 2, wherein:

q. The information regarding the at least one additional component of the microcontroller includes information about at least one of an, internal storage element, an analogldigital (AID) converter, a digitallanalog.(D/A) converter, and at least one databus: The information read in reconfigures the I/O ports 12 and 13, which are used to communicate with the peripheral under test via data buses. The information read is about data buses because it determines how the ports are configured and therefore how the data buses will be used. [Titherley: Figure 2, column **4,** lines 25-45 Column 3,'lines 23-48]

17. As per claim 17, Titherley teaches the control element according to claim 6, wherein:

r. The information read in corresponds to at least one of the at least one microprocessor of the microcontroller and at least one additional component of the microcontroller: The information read in corresponds to the Ports 12 and 13, an

additional component of the microcontroller, because the information is used for initializing them. [Titherley: Column 4, lines 25-64]

18. As per claim 18, Titherley teaches the control element according to claim 17, wherein:

s. The information regarding the at least one additional component of the microcontroller includes in formation about at least one o fan internal storage element, an analogldigital (AID) converter, a digitallanalog (DIA) converter, and at least one databus. The information read in reconfigures the I/O ports 12 and 13, which are used to communicate with the peripheral under test via data buses. The information read is about data buses because it determines how the ports are configured and therefore how the data buses will be used. [Titherley: Figure 2, column 4, lines 25-45 Column 3, lines 23-48]

19. As per claim 19, Titherley teaches the method according to claim 1, wherein

t. The program run is controlled by one of activating and deactivating at least one of command sequences for specific features of the microcontroller and workarounds: (The testing program, once initialization is completed, allocates specific functions to the keys S1-S5. These test specific features of whatever peripheral is attached to the testing device via I/O connector 6 (Titherley: shown in figure 2). Activating the specific testing command sequence occurs when any of the

keys S1-S5 is pressed, and deactivating the command sequence occurs when the tests are finished. For instance, when S1 is pressed (activating), the drive will step to a specified track number, "then return to the routine which outputs the drive status and awaits a further key operation" (deactivating). [Titherley: Column 4, line 55 to column 5, lines 401]

20. As per claim 20, Titherley teaches the method of claim 1, wherein:

u. The information read in corresponds to at least one of a manufacture, model, type and size of components of the microcontroller: The information is used to initialize components of a certain manufacture, model and type, and therefore corresponds to a manufacture, model and type. [Titherley: Column 4, lines 25-45]

21. As per claim 21, Titherley teaches the control element of claim 6, wherein:

v. The information read in corresponds to at least one of a manufacture, model, type and size of components of the microcontroller: The information is used to initialize components of a certain manufacture, model and type, and therefore corresponds to a manufacture, model and type. [Titherley: Column 4, lines 25-45]

22. As per claim 22, Titherley teaches the microcontroller according to claim 10, wherein:

w. The information read in corresponds to at least one of a manufacture, model, type and size of components of the microcontroller: The information is used to initialize components of a certain manufacture, model and type, and therefore corresponds to a manufacture, model and type. [Titherley: Column 4, lines 25-45]

23. As per claim 23, Titherley teaches the method according to claim 1, wherein the information is read in from a read-only information register: [Titherley: EPROM 2716, figure 2 and col. 4, lines 25-40.]

24. Given the similarities between claim 23 and claims 24 and 25, the arguments as stated for the rejection of claim 23 also apply to claims 24 and 25.

25. As per claim 26, Titherley teaches the method according to claim 1, wherein the program run occurs without external intervention for operating or displaying as to a program time sequence: [The program run requires the hardware shown in figure 2 and the operator. No external intervention from anything outside the hardware of figure 2 and the operator is necessary. Therefore, the program run occurs without external intervention for operating or displaying.]

26. Given the similarities between claim 26 and claims 27 and 28, the arguments as stated for the rejection of claim 26 also apply to claims 27 and 28.

27. As per claim 29, Titherley teaches the method according to claim 1, wherein there is only one control program for different hardware configurations: [Module 7 contains a number of routines which constitute one control program which can control multiple different hardware configurations dependent on the data input by the operator. Col. 4, line 55 to col. 5, line 37.

28. Given the similarities between claim 29 and claims 30 and 31, the arguments as stated for the rejection of claim 29 also apply to claims 30 and 31.

29. As per claim 32: Titherley teaches a method for controlling a run of a program executable on at least one microprocessor of a microcontroller, comprising:

reading in information regarding a hardware of the microcontroller from at least one information register of the microcontroller . [Titherley: Column 4,'lines 25-64]; and

actuating at least one switch via which the program run is controlled as a function of the information read in [Titherley: Column 4, lines 25-64]

wherein the program is executable using at least two different microcontroller steps, and that in the at least one information register of the microcontroller, the information directly relates to hardware of a special microcontroller step and that, depending on this information, execution of the program is switchable so that only

program parts are executed which are necessary for the special microcontroller step, so that the execution of the program is directly related to the special microcontroller step. [Titherley: Column 4, lines 25-64] (The information contained in module 7 directly relates to the peripheral being tested. Upon reading the module, the monitor configures the ports of devices 12 and 13 to perform the specific tasks needed to test the peripheral).

Through the use of plug and play, motivation for which has been described above, the monitor will then be able to execute tests absent of user input since it is known which device is being tested.

30. Claims 5, 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Titherley, U.S. Patent 4,489,414 in combination with PnPISA in view of Simar Jr. et al., U.S. Patent 6,182,203, herein referred to as Simar.

31. As per claim 5, Titherley teaches the method according to claim 4, wherein the invention shown in figure 2 is a portable, self-contained, engineer's diagnostic tool with can be used independent of a host computer for testing and controlling (during testing) of another device it is attached to. However, Titherley fails to further teach wherein the diagnostic tool is used for testing a device within a motor vehicle, and therefore fails to teach the technical operations and processes relate to a motor vehicle.

Simar teaches the use of processors in engine control units for motor vehicles in Figure 83 and column 88, lines 36-59. Simar also specifically teaches the use of their processor for real-time applications being used in engine control in column 88, lines 36- 59.

It would have been obvious to one of ordinary skill in the art to use the disclosed portable diagnostic processor of Titherley to test a vehicle because it is portable and can be used independently of a host computer, which one of ordinary skill in the art would have recognized as being a benefit when testing device in a motor vehicle. This would have provided the motivation to use the invention of invention Titherley to test devices within a motor vehicle, and therefore having the technical operations and processes relating to a motor vehicle.

34. As per claim 9, Titherley teaches the control element according to claim 6 wherein the invention shown in figure 2 is a portable, self-contained, engineer's diagnostic tool with can be used independent of a host computer for testing and controlling (during testing) of another device it is attached to. However, Titherley fails to further teach wherein the control element is for a control unit of an internal combustion engine and wherein the internal combustion engine is of a motor vehicle.

Simar teaches the use of processors in engine control units for motor vehicles in Figure 83 and column 88, lines 36-59. Simar also specifically teaches the use of

their processor for real-time applications being used in engine control in column 88, lines 36- 59.

It would have been obvious to one of ordinary skill in the art to use the disclosed portable diagnostic processor of Titherley to test a vehicle because it is portable and can be used independently of a host computer, which one of ordinary skill in the art would have recognized as being a benefit when testing a device in a motor vehicle. This would have provided the motivation to use the invention of Titherley to test devices within a motor vehicle, and therefore having the control element for a control unit of an internal combustion engine of a motor vehicle.

37. As per claim 15, Titherley teaches the microcontroller according to claim 14 wherein the invention shown in figure 2 is a portable, self-contained, engineer's diagnostic tool with can be used independent of a host computer for testing and controlling (during testing) of another device it is attached to. However, Titherley fails to further teach wherein: the technical operations and processes relate to a motor vehicle.

Simar teaches the use of processors in engine control units for motor vehicles in Figure 83 and column 88, lines 36-59. Simar also specifically teaches the use of their processor for real-time applications being used in engine control in column 88, lines 36- 39. It would have been obvious to one of ordinary skill in the art to use the disclosed portable diagnostic processor of Titherley to test a vehicle's

microcontrollers because it is portable and can be used independently of a host computer, which one of ordinary skill in the art would have recognized as being a benefit when testing device in a motor vehicle. This would have provided the motivation to use the invention of invention Titherley to test devices within a motor vehicle, and therefore having the technical operations and processes relating to a motor vehicle.

(10) Response to Argument

1. Appellant's first argument, on Page 11 of the Appeal Brief, Appellant has argued that there is no valid motivation to combine Titherley with the Plug and Play reference (herein Halfhill to avoid confusion with the term), stating that "the Plug and Play reference is directed to arbitrating conflicting demands for system resources by a plurality of cards attached to an ISA bus", and has argued that Titherley is directed towards testing serially attached devices, and not towards devices attached in parallel. However, even if this was the case, the Appellant has disregarded the motivation provided in the rejection, and the primarily stated rejections in Halfhill, and has instead picked a usage of Plug and Play from further in the reference, which has no bearing upon the combination or the motivation to combine. The Examiner refers to the cited portion of Halfhill, which is Page 3, under the heading "Step by Step". This section clearly identifies the three immediate goals (advantages) of Plug and Play: Making PCs easier to set up and configured, to ease the task of installing new hardware and software, and to endow PCs with new features, such as being able to change

configurations of the fly, and being able to respond dynamically to configuration events (such as attaching a peripheral like a modem). Additionally, Plug and Play reduces complexity of the system, thus potentially saving costs for the user by reducing the need for technical support (See page 2 of Halfhill). There is no mention of bus arbitration in these features, and Examiner has not attempted to mention bus arbitration at any point during prosecution of the case. While Plug and Play may provide bus arbitration, there are clearly many other advantages of Plug and Play, such as the ones cited in the rejection, therefore Examiner believes that the Appellants argument is improper and moot, as it is not only not directed at the motivation provided in the combination, but the Appellants argument is based on the concept that one of ordinary skill in the art would not be motivated to combine Halfhill with Titherley based on the bus arbitration, ignoring the many other advantages and features of Plug and Play, of which are relevant to the rejection.

2. Appellants next argument states that the motivation provided in the Final Office Action is not valid in the context of modifying the Titherley reference, stating that Titherley teaches away from the motivation of reducing the complexity of the system, by making it easier to configure for the user, by stating “The Titherley reference, for example, stresses the importance of reducing the complexity of the system by altering the programming of the testing device by changing plug—in program modules and thereby avoiding the use of a general purpose computer due to the cost and unwieldiness of such a computer as an engineers diagnostic tool”. However, Examiner

believes that this argument only serves to strengthen the rejection, as it would appear that Titherley itself states the need to reduce complexity, and since Halfhill can provide that with Plug and Play, it would seem that there is a strong motivation provided within Titherley itself to incorporate the teachings of Halfhill.

Appellant has further argued that Titherley refers to a hand carried device, and that by incorporating Plug and Play to the device, it would “greatly increase the complexity of the system", because “the portable test equipment would need to be modified and enhanced to communicate with plug-and-play devices in a manner that would accomplish the “Plug and Play” functionality”, which is more complex than the manner in which Titherley already communicates with the peripheral under test”. However, Examiner believes that the Appellant is not only misinterpreting Titherley, but is also disregarding the very premise of modifying a reference in the first place. The fact is, to modify anything, that is, to perform any combination under 103, requires changes to be made. By Appellants position, every combination ever made would result in an increase in complexity, because work must be done to modify the device to incorporate the new features. However, this has nothing to do with the complexity of the device. The end result is that with the modification, the device of Titherley will be less complex, and easier to use than the previous device, which is exactly what Titherley desires when he states, as admitted by the Appellant, that the stressed importance is to reduce complexity, which is done by adding in Plug and Play. Appellants arguments have ignored this fact, and have instead made an argument in which all of the alleged complexity is in the modification step, which has no bearing on the complexity of the

device, thus it is not a valid argument to say that work done to improve a device somehow makes it worse, because of the work to modify the device in the first place. Examiner does not find this to be a convincing or valid argument, and as stated above, feels that it is a misrepresentation not only of Titherley, but also of the entire purpose of what 35 U.S.C. 103(a) stands for.

3. Appellant has further argued that there is further no motivation to combine the references, because the device of Titherley is not a PC, and the peripherals that the device Titherley tests are not plug and play enabled peripherals, thus even if Titherley was modified to work with plug and play, it would not provide any increased functionality, since it does not test plug and play peripherals. However, the Appellant has overlooked the statement of statutory basis of 103, which states that the combination must be obvious **at the time the invention was made**. Of course, Titherley does not teach testing Plug and Play peripherals, because Titherley was published a decade before Plug and Play existed, so it could not possibly be testing Plug and Play peripherals, otherwise the rejection would have been under 35 U.S.C. 102. However, Titherley tests peripherals, and **at the time the invention was made**, in 2004, Plug and Play was extremely common, if not a standard for peripherals (as it is discussed being widely used a decade before the filing date of the application, in 1994), thus the devices under test in Titherley, in 2004, would have been plug and play compatible peripherals, for example, the modem described in Halfhill on page 3. Therefore, when looking at the time the invention was made, one of ordinary skill in the

art would have been motivated to motivated to implement plug and play functionality into Titherley, as the devices it would be used to test at the time the invention was made would have been plug and play peripherals.

4. Additionally, on Page 14 of the Appeal Brief, the Appellant has stated that it would be overly burdensome to modify all of the devices that the Titherley reference is intended to test to be plug and play enabled, stating that this has "incredible difficulty". Appellant has quoted a section of Halfhill which states "And although plug and play does a remarkable job of making PCs friendlier while maintaining compatibility with existing hardware, it also requires that you eventually replace almost all that hardware". Examiner asserted that this was taken out of context, and the Appellants had disagreed. However, Examiner refers to Page 4 of the Halfhill reference, and when looking at the quote not in the abstract, it can be seen that the entire quote says that "All of today's hardware devices will work in a PnP system, but because they are as susceptible as ever to configuration problems, you will eventually need to replace them if you want full PnP flexibility…The bottom line is that to derive maximum benefit from PnP, you'll eventually have to replace or upgrade almost everything you own". Examiner believes there is a very wide gap between "all hardware must be replaced" and "to take full advantage of plug and play, all the hardware must be replaced". However, the point is moot, because as stated above, **at the time the invention was made**, the devices under test would have already been plug and play compatible, so there would be no

need to replace any hardware. And even if there was, it would only be required to take full advantage of plug and play, but there is no need to do so.

Examiner also notes that Appellant has stated on Page 14 of the Appeal Brief that the Examiner has conceded in the Advisory Action that the requirement to replace all hardware would be burdensome. Examiner cannot determine how Appellant came to this conclusion, as the Examiner stated very clearly in the Advisory Action that **"Examiner sees no burden to implement Plug and Play"** (Line 15). The Examiner cannot understand how the Appellant has viewed that statement, and somehow interpreted it to be the exact opposite of what was stated, however, Examiner would like to make clear on the record that at no point has the Office conceded the point that it would be burdensome to combine the references, and contests the Appellants claims that it has done so. There is no burden, because nothing **has** to be replaced. As stated before, most peripherals at the time the invention was made would have been plug and play anyway, but even if they were not, combining Plug and Play functionality into Titherley would still work, however, the full advantages of Plug and Play would not be realized on non-Plug and Play peripherals, but those that did have it would be able to take advantage. Therefore there is absolutely no need to replace all of your hardware to make this combination, but doing so would be helpful (but not required).

5. Appellant has then stated that since the references are not properly combinable, they cannot and do not disclose the claimed language which Examiner claims is taught by the combination of references (which has been highlighted by the Appellant on Page

14). However, based on the rationale laid out above, Examiner believes that the references are indeed properly combinable, and as a result, the limitations are taught, as laid out in the rejection. The inclusion of Plug and Play functionality into Titherley would allow the device to be able to detect what the device is which is under test, thus no longer requiring the user to input what the device under test is, and how to test it, thus vastly reducing the complexity of the device, and removing the potential for user error, as it would all be automated. Given the advantages stated above, and the clear motivation to combine the references, Examiner believes that the combination is both valid, and contains a clear motivation to combine.

6. . Appellant has further argued that the Examiner has used improper hindsight analysis to reconstruct the claimed invention. However, Examiner notes the following:

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Additionally, Examiner finds it hard to believe that incorporating Plug and Play, a standard used for almost a decade prior to the Appellants invention, would be

considered hindsight analysis. Plug and Play was extremely well known in the art, and to make use of it in Titherley could not possibly be considered hindsight, as there are many clear advantages to using Plug and Play which have been laid out above, to motivate one of ordinary skill in the art to combine the references, thus no hindsight reconstruction has taken place.

7. Regarding Appellants arguments regarding Claims 5, 9, and 15, Appellant has argued that due to the lack of a proper *prima facie* case, the rejection of those claims are not proper. However, based on the arguments laid out above by the Examiner, the Examiner believes that a strong *prima facie* case has been laid out, and that the rejections of the claims are proper.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Robert Fennema

/Robert Fennema/

Conferees:

Eddie Chan

/Eddie P Chan/

Supervisory Patent Examiner, Art Unit 2183

/Manorama Padmanabhan/

WQAS, TC2100, WG2180